

# SYSTEM AND METHOD FOR TIME-DOMAIN MULTIPLEXED COMMUNICATION IN ULTRASOUND APPLICATIONS

## Abstract of Disclosure

A time-domain communication system in an ultrasonic imaging system includes an ultrasonic probe having an ultrasonic array with ultrasonic array outputs and a time-domain multiplexer with an input connected to each of the ultrasonic array outputs and also having a multiplexer output. The time-domain multiplexer continually cycles through each of the ultrasonic array outputs at a predetermined frequency connecting each of the ultrasonic array outputs to the multiplexer output for a predetermined amount of time. An ultrasonic data processing unit is provided and includes a de-multiplexer connected to the multiplexer output. The de-multiplexer has de-multiplexer outputs and continually cycles through each of the de-multiplexer outputs at the predetermined frequency connecting each of the de-multiplexer outputs to the multiplexer output for the predetermined amount of time. A timing reference is connected to the time-domain multiplexer and the de-multiplexer for providing a single timing reference to determine at least the predetermined frequency.

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